

## CHAPTER OVERVIEW

### 14: Thermochemistry

All chemical changes are accompanied by the absorption or release of heat. The intimate connection between matter and energy has been a source of wonder and speculation from the most primitive times; it is no accident that fire was considered one of the four basic elements (along with earth, air, and water) as early as the fifth century BCE. In this set of lessons, we will review some of the fundamental concepts of energy and heat and the relation between them. We will begin the study of *thermodynamics*, which treats the energetic aspects of change in general, and we will finally apply this specifically to chemical change. Our purpose will be to provide you with the tools to predict the energy changes associated with chemical processes. This will build the groundwork for a more ambitious goal: to predict the direction and extent of change itself.

[14.1: Energy, Heat and Work](#)

[14.2: The First Law of Thermodynamics](#)

[14.3: Molecules as Energy Carriers and Converters](#)

[14.4: Thermochemistry and Calorimetry](#)

[14.5: Calorimetry](#)

[14.6: Applications of Thermochemistry](#)

[14.E: Thermochemistry \(Exercises\)](#)

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